

DESCRIPTION OF A NEW ACANTHOCEPHALAN SPECIES *NEOECHINORHYNCHUS LONGIORCHIS* N.SP. (NEOECHINORHYNCHIDAE) FROM THE FISH *OTOLITHUS ARGENTEUS* (SCIAENIDAE) FROM KARACHI COAST, KARACHI, PAKISTAN

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ABSTRACT

An acanthocephala *Neoechinorhynchus longiorchis* .n.sp of family Neoechinorhynchidae based on male specimens is described from the fish *Otolithus argenteus* (Sciaenidae) of Karachi Coast, Pakistan. The body size of specimens, number of proboscis hooks, size of leminisci, testes, cement glands, cement reservoir, saefftgen's pouch and seminal vesicle morphology serve to distinguish *Neoechinorhynchus longiorchis*.n.sp from previously described species of the genus.

Key words: *Neoechinorhynchus longiorchis* .n.sp, intestine, *Otolithus argenteus*, Karachi.

INTRODUCTION

Neoechinorhynchus Stiles and Hassall (1905) is one of the largest genera of Acanthocephala. The concept of *Neoechinorhynchus* was first formulated when Hamann (1892) designated *Neoechinorhynchus* as the type genus for his new family Neoechinorhynchidae. In their treatment of generic types, Stiles and Hassall (1905), Luhe (1911) provided the first generic diagnosis of "Neoechinorhynchus Ham". Of the 109 nominal species described belonging to *Neoechinorhynchus*, seven are related to other genera, 14 are considered invalid, 11 belong to the sub genus *Hebesoma*, 48 are in the sub genus *Neoechinorhynchus* and 29 are retained as valid but cannot be assigned to either subgenus (Amin, 2002). Many species of genus are known from the fishes of India, Japan, Pakistan and other countries (Yamaguti, 1961; Amin 2002, Bilqees, 1972).

The present work describes observations on *Neoechinorhynchus longiorchis* n.sp., found in *Otolithus argenteus* (Sciaenidae) collected from the West Wharf, Karachi Coast, Pakistan. The species name *N.longiorchis* refers to the elongate spindle-shaped testes.

MATERIAL AND METHOD

Acanthocephalans were collected in Petri dish with distilled water, refrigerated and then fixed in AFA for 24 hours under glass slides pressure, washed several times with 70% ethanol. These were stained with Mayer's carmalum, dehydrated in graded series of alcohol and cleared with clove oil. Parasite identification is according to Yamaguti (1961) and Amin and Christison (2005). All measurements are in millimeters (mm). Holotype is deposited in the department of Zoology, JUW, Karachi.

DESCRIPTION

***Neoechinorhynchus longiorchis* .n.sp.**
(Fig.01,a-e)

Host: *Otolithus argenteus* (Sciaenidae)
Location: Intestine
Locality: Karachi Coast
No. of specimens: 02 males from 01 fish, 25 hosts examined.
Holotype No.: A-2 JUW

Male: Body is elongated, cylindrical, outer surface with alate cuticular folds. An antero-dorsal hump is present. Body 12.5-12.6x0.5-0.6 in size. Proboscis is armed with 3 rows of 6 hooks. Anterior hooks larger, middle and posterior smaller and equal in length. Anterior hooks are 0.17-0.18x0.01-0.02 while middle and posterior hooks are 0.02-0.03x0.005-0.01 in size. Proboscis is well developed. Proboscis receptacle is double-walled, 0.4-0.5x0.25-0.26 in

size. Leminisci unequal, long, tubular, distant from the anterior testis and $2.5\text{--}2.6 \times 0.13\text{--}0.14$ in size. Testes two, long and spindle shaped. Anterior testis smaller than posterior $0.7\text{--}0.8 \times 0.1\text{--}0.11$ in size, while posterior testis is $1\text{--}1.2 \times 0.15\text{--}0.16$ and far from male genital organs. Cement gland large, rounded, $0.5\text{--}0.6 \times 0.33\text{--}0.34$, cement reservoir small, rounded, $0.15\text{--}0.16 \times 0.14\text{--}0.15$ in size, Safftigen's pouch is somewhat elongated, posterior to the cement reservoir and $0.23\text{--}0.24 \times 0.14\text{--}0.15$ in size, seminal vesicle is large, rectangular measuring $0.34\text{--}0.35 \times 0.24\text{--}0.25$. Bursa is invaginated, elongated, $0.74\text{--}0.75 \times 0.25\text{--}0.26$ in size.

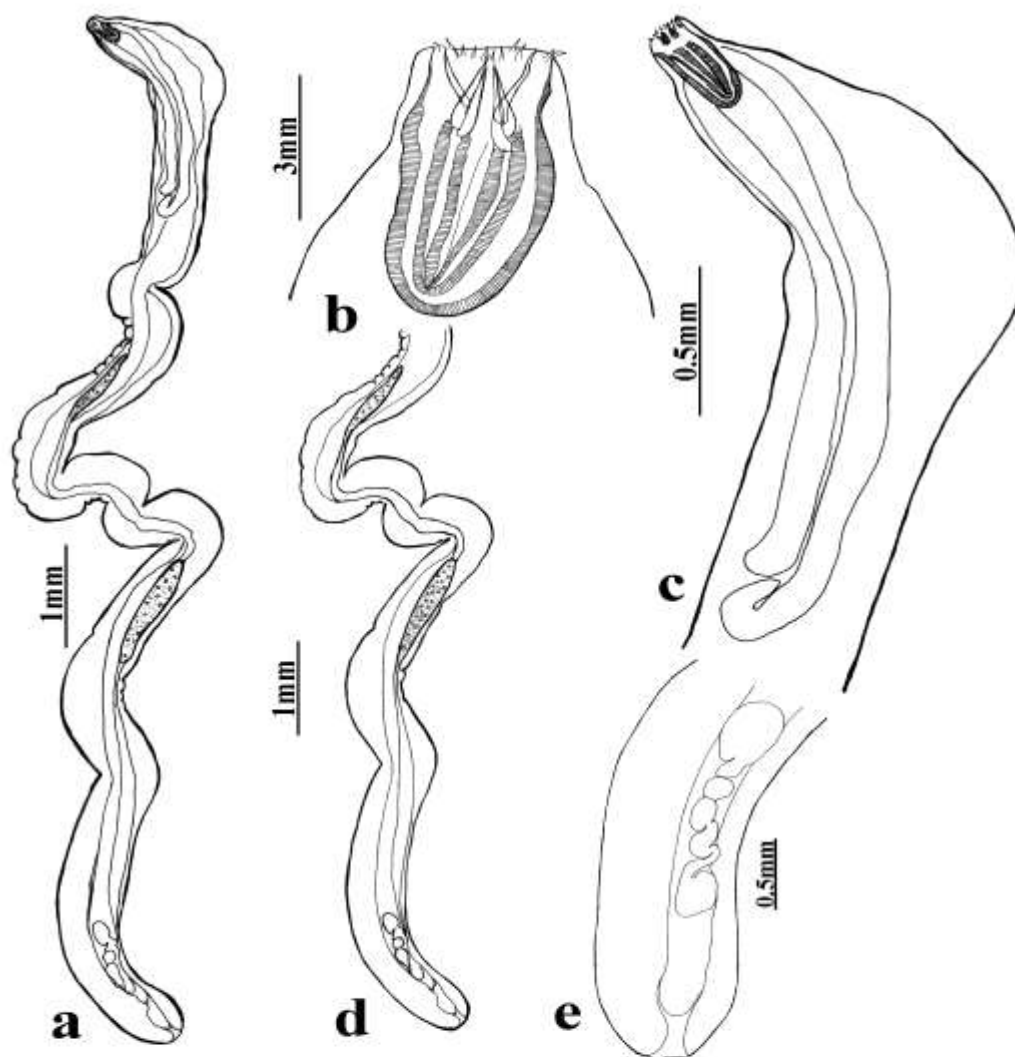


Fig.1. *Neoechinorhynchus londidorchis* n.sp., holotype (a) entire specimen (b) proboscis enlarged (c) anterior end showing leminisci (d) elongate spindle-shaped testes (e) posterior end showing genital organs.

Etymology: The species name *N. longiorchis* refers to the elongate spindle-shaped testes.

REMARKS

Among the described species *N. tylosuri* is similar to the present species having hooks in three circles, anterior hooks three times larger than middle and posterior, proboscis hooks decrease progressively in length, middle and

posterior hooks are equal in length 60-69,30,30-35 in female while 75,35,35 mm long in male, These are slender worms, 16.0-42.0mm long , females 21-70 mm long. Leminisci unequal at a distance from anterior testis. Posterior testis and cement gland equal and much longer than anterior testis. But *N. tylosuri* is distinguishable from the new species which has long spindle-shaped testes. In present species cement gland is larger and rounded, cement reservoir is small and rounded, Saeffigen's pouch is elongated, seminal vesicle is large and rectangular. The present species is recovered from *Otolithus argenteus* while *N. tylosuri* was recorded from *Tylosurus schismatorhynchus*.

The new species *Neoechinorhynchus longiorchis* n.sp can be differentiated from other species by its prominent diagnostic features. *N. topseyi* Podder, 1937 was described from Calcutta (West Bengal). It is found in *Filimanus heptadactylus*. Its distinguish characteristics include lack of an antero-dorsal hump and tegument folds, the posterior proboscis hooks, and amoeba-shaped cephalic ganglion and shorter neck (Podder, 1937; Gupta and Jain, 1983). *N. dorsovaginatus* Amin and Christison (2005) described from southern coast of South Africa is found in dusky kob *Argyrosomus japonicus* (Sciaenidae). *N. dorsovaginatus* has short trunk, an angular antero-dorsal hump, larger posterior proboscis hooks, smaller anterior hooks, cement gland shorter than posterior testis (as apposed to larger in present species).

The present specimens can also be distinguished from three other species of *Neoechinorhynchus* previously reported from Pakistan. These are *N. johnii* (Yamaguti, 1939) Bilqees, 1972, and *N. karachiensis* Bilqees, 1972, *N. formosanum* (Harada, 1939) Bilqees, (1972). These are also different from the present specimens in morphological characteristics.

In *N. johnii* the testes are peculiar in being dissimilar in shape and size. The anterior proboscis hooks in male are slightly larger than in female, and the size of body, proboscis receptacle and leminisci are much smaller than in the present species.

In *N. karachiensis* hooks are longer and, leminisci extend posteriorly about half the anterior testis and the cement gland is much larger than testes as in the present species.

In *N. formosanum* proboscis is short and globular, proboscis receptacle is sub cylindrical and short, leminisci are filiform, and testes are elongate but not spindle shaped.

In view of a different combination of characters as compared to other species present specimens are regarded new species.

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